

TARASOVA, T.M.

1. LEVSHIN, V. L. TARASOVA, T. M.
2. USSR (600)
4. Molecules
7. Effect of the molecular structure and of the temperature of medium upon luminescence and absorption of complex molecules. Izv AN SSSR Ser fiz No 5 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

TARASOVA, T. M.

"Effect of Temperature and Solvent on the Absorption and Emission of Acridine Derivatives." Sub 16 May 51, Moscow Order of Lenin State University M. V. Lomonosov.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 430, 8 May 55.

TARASOVA, T. M.

180T101

USSR/Physics - Spectra, Acridine

Feb 51

"Effect of Temperature and Viscosity on Absorption and Emission of Acridine Derivatives," T. M. Tarasova, Moscow State U

"Zhur Eksper i Teoret Fiz" Vol XXI, No 2, pp 189-203

Found mirror symmetry in absorption and emission spectra of simple acridine deriv. Deduced empiric formulas, expressing dependence of absorbing and emitting power on temp, showing rise of absorbing power with decreasing temp. Detd oscillation frequency of mol.

LC.

180T101

34150

S/169/62/000/001/079/087
D228/D302

3.5/20

AUTHOR: Tarasova, T. M.

TITLE: The polarization of noctilucent clouds

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1962, 24, abstract 1G164 (Atron. tsirkulyar, no. 22, Apr. 30, 1961, 15-18)

TEXT: Noctilucent clouds and the twilight sky were photographed by a three-lens projector camera with polaroids fixed before the objectives in the summer of 1953-1954 for studying the polarization properties of noctilucent clouds. The axes of the polaroids were oriented at an angle of 60° . Measurements of the degree of polarization and the position of the plane of polarization were determined by the method of Academician Fesenkov. Processing the differences between the intensity of summary light and the crepuscular sky which gives the intensity of the cloud light, results in the following: 1) The angle between the planes of polarization and dispersion of a noctilucent cloud is $90 - 110^\circ$; 2) the magnitude of

Card 1/2

34150

S/169/62/000/001/073/083
D228/D302

The polarization of ...

the degree of polarization of noctilucent clouds is higher than that of summary light. The main conclusions are: 1) In the presence and also in the absence, of noctilucent clouds the polarization of the twilight sky is positive for those points in the sky where noctilucent clouds appeared, i.e. the crepuscular sky's planes of polarization and dispersion coincide; 2) the appearance of noctilucent clouds on a crepuscular sky background leads to the turning of the polarization plane of summary light by a certain angle, determined by the correlation of the intensities between the light of a noctilucent cloud and the light of the crepuscular sky, and also to the reduction of the degree of polarization down to a few percent; 3) the polarization of noctilucent clouds is negative, i.e. the plane of polarization of noctilucent clouds is perpendicular to the plane of dispersion. [Abstractor's note: Complete translation.]

Card 2/2

37460

S/035/62/000/004/019/056

A001/A101

3.5120

AUTHOR: Tarasova, T. M.

TITLE: Direct measurements of night sky glow

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 4, 1962, 61,
abstract 4A500 ("Astron. tsirkulyar", 1961, maya 30, no. 222,
31-32)

TEXT: The author reports on discovery, by means of rockets, of layers of
hydroxyl emission (73 - 100 km), O₂ emission (74 - 100 km), emission of line
 λ 5577 (90; 136 - 154 km) and glow of continuous atmospheric background of
terrestrial origin (64-110 km).

[Abstracter's note: Complete translation]

Card 1/1

TARASOVA, T. M.

"Night Sky Main Emission Lines Intensity Distribution with Height"

Soviet Papers Presented at Plenary Meetings of Committee on Space Research
(COSPAR) and Third International Space Science Symposium, Washington, D. C.,
23 Apr - 9 May 62.

41912

S/560/62/000/013/008/009
I046/I242

3.5120

AUTHOR: Tarasova, T.M.

TITLE: Direct measurements of the nightglow in the spectral region of $\lambda = 8640 \text{ \AA}$

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki zemli. no.13. Moscow, 1962, 107-109

TEXT: A photometer equipped with an interference filter of half-width $\Delta\lambda = 280 \text{ \AA}$ (transmission band $\lambda = 8640 \text{ \AA}$, radiation of molecular oxygen) was shot in a rocket to an altitude of 200 km on September 23, 1960. The measurements indicate that the entire radiation of molecular oxygen is concentrated in the layer $74 < h < 120 \text{ km}$ with the center of gravity at $81 \pm 2 \text{ km}$. At other altitudes mole-

Card 1/2

S/560/62/000/013/008/009
I046/I242

Direct measurements of the...

cular oxygen does not radiate. There are two figures.

SUBMITTED: August 2, 1961

Card 2/2

TARASOVA, T.M.; SLEPOVA, V.A.

Altitude distribution of the radiation intensity of the main
emission lines of the night sky. Geomag. 1 aer. 4 no.2:321-327
Mr-Apr '64. (MIRA 17:4)

1. Institut prikladnoy geofiziki AN SSSR.

L 2797-66 FSS-2/EWT(1)/FCC/EWA(h) GS/GW
ACCESSION NR: AT5023568

UR/0000/65/000/000/0089/0090

AUTHOR: Tarasova, T. M.

TITLE: Atmospheric self-radiation

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 89-90

TOPIC TAGS: atmospheric radiation, meteorologic rocket, luminescence, photometric analysis

ABSTRACT: The author studies the behavior of atmospheric sodium emission on the basis of material obtained in 1960 using rocket photometry. Emission was studied at 65-200 km where, in addition to its ascent, the rocket was rotated through 360° (in the vertical plane). Sodium is localized in a layer at an altitude of 85 km. The distribution of brightness from molecular and atomic oxygen and hydroxyl has a layered structure. There is a spatial correlation between the emissions of OH, O and O₂: for emissions of 5577 and 8645 Å, the ratio is nearly constant during a variation in radiation intensity for each of the emissions by a factor of 14-25. The

Card 1/2

L 2797-66

ACCESSION NR: AT5023568

I_{5577}/I_{OH} and I_{8645}/I_{OH} ratios are also constant, which indicates an analogy in the spatial distribution of 5577 Å, 8645 Å and hydroxyl luminescence. Radiation from all three emissions is concentrated in layers at altitudes of 70-110 km. It would be expected that sodium would also show good spatial correlation with these emissions, but the I_{5893}/I_{OH} , I_{5893}/I_{8645} and I_{5893}/I_{5577} ratios do not remain constant when the axis of the instrument is changed in space and also vary with height. This indicates that sodium luminescence in the upper atmosphere is distributed according to a law which differs considerably from the layered structure of the other three emissions. A comparison of sodium radiation with that of atomic oxygen at 6300 Å showed an unusually high spatial correlation: the intensity ratio remains constant on both the ascending and the descending branches of the rocket trajectory. It is assumed from this that the distribution of luminescence with altitude conforms to similar laws in these two cases. Observation of a considerable fraction of the sodium luminescence (~30%) at higher altitudes requires an examination of hypotheses on the agent responsible for excitation of sodium atoms. Orig. art. has: 1 figure.

[14]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES,sv

NO REF SOV: 002

OTHER: 003

ATD PRESS: 4102

Card 2/2 BVK

L 23451-66 EWT(1)/FCC GW

ACC NR: AP6012829

SOURCE CODE: UR/0293/66/004/002/0242/0248

AUTHOR: Tarasova, T. M.

ORG: none

TITLE: Night airglow in the λ 6300 Å region

SOURCE: Kosmicheskoye issledovaniya, v. 4, no. 2, 1966, 242-248

TOPIC TAGS: upper atmosphere, atmospheric physics, atmospheric optic phenomenon, atmospheric radiation, night airglow

ABSTRACT: The article contains data obtained in September 1960 from a rocket-lofted photometer which operated in the 64--200 km height interval. Materials are examined which were obtained in sections of the trajectory, in which the photometer performed slow revolutions, scanning the sky from the zenith to the horizon. For the spectral region in which $\lambda_{\max} = 6300 \text{ Å}$ ($\Delta\lambda = 240 \text{ Å}$), a substantial difference is shown between the theoretical and experimental values of the ratio of glow intensity at the horizon and glow intensity at the zenith. Assuming the existence of an emission layer of atomic oxygen (λ 6300 Å) which, according to the data of professional literature, is localized at one altitude (300 km), the author obtains theoretical values of the relationships I_0/I_z , calculated for the case of absence of radiation absorp-

Card 1/2

UDC: 550.388

L 23451-66

ACC NR: AP6012829

tion and dispersion in the medium. The values of relationships are: 4 for $H = 100$ km, 5 for $H = 170$ km, and 6 for $H = 190$ km. Experimental values of these relationships have been found to be 2, 2.5, and 3, respectively. Thus, the idea that the glow of the red line of atomic oxygen is localized at the altitude of 300 km cannot explain the experimental data obtained. Rather, analysis of the whole complex of data leads to the conclusion that the glow of the red line of atomic oxygen is not localized in a narrow layer, but is distributed in a fairly thick layer of the atmosphere, starting with altitudes of the order of 100 km and up to altitudes of over 1000 km. The author thanks V. A. Slepovaya, I. I. Trilestnik, N. N. Kudryavtseva, V. I. Kashin and G. A. Labedeva. Orig. art. has: 3 formulas and 7 figures. [JJ]

SUB CODE: 04/ SUBM DATE: 23Nov64/ ORIG REF: 003/ OTH REF: 005
ATD PRESS: 4232

Card 2/2

L 10662-63

EPF(c)/EWP(j)/EWT(m)/BDS--ASD--Pr-4/Pc-4--RM/WW
S/079/63/033/004/009/010 64

AUTHOR: Motsarev, G.V., Rozenberg, V.R., Tarasova, T.T.

TITLE: Halogenation of aromatic silanes. XII. The obtaining and the properties of chlorine derivatives of n-tolylmethyldichlorosilane with atoms of chlorine in methyl groups. The synthesis of n-trichloro-methylphenyltrichloromethyldichloro(ethoxy)silanes

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 4, 1963, 1299-1303 7

TEXT: It is established that upon the initiation of the reaction of chlorination of n-tolyl(methyl)dichlorosilane by azobisisobutyronitrile (110-115 degrees), chlorine derivatives of n-tolyl(methyl)dichlorosilane with an atom of chlorine in the methyl groups are formed. In this case the first CH₃ group which is chlorinated is the one in the aromatic ring which is in the

Card 1/2

.L 10662-63

S/079/63/033/004/009/010

0

Halogenation of aromatic silanes...

para position with respect to the atom of silicon. The chlorination of n-tolylmethyldichlorosilane in the presence of azobisisobutyronitrile, in contrast to the chlorination of phenylmethyldichlorosilane, is accompanied by destructive halogenation involving the splitting of the silane molecule at the C-Si link. Synthesized for the first time are n-dichloromethylphenyl(methyl)-dichlorosilane, n-trichloromethylphenyl(trichloromethyl)dichlorosilane, and n-trichloromethylphenyl(trichloromethyl)diethoxysilane.

SUBMITTED: May 8, 1962

kes/*[signature]*
Card 2/2

L 16061-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

ACCESSION NR: AP4046175

S/0079/64/034/009/2911/2915

AUTHOR: Motsarev, G. V.; Rozenberg, V. R.; Tarasova, T. T.

TITLE: Halogenation of aromatic silanes XIV: Bromination of phenylmethyldi-chlorosilane

SOURCE: Zhurnal obshchey khimii, v. 34, no. 9, 1964, 2911-2915

TOPIC TAGS: halogenation, aromatic silane, phenylmethyldichlorosilane, bromination, aryl alkyl chlorosilane, ionic catalyst

ABSTRACT: The bromination of aryl-alkylchlorosilanes is briefly reviewed. Bromination of the title compound was conducted with dry bromine under diffused daylight with or without ionic catalysts (I, SbCl_3) at various temperatures. The procedure is described, yields and identification of end products reported. Bromination without catalysts and a 1:1 molar ratio of the reagents led between 0-25 C to the formation of monobromophenylmethyldichlorosilane (90% yield). However, higher temperatures, to 60C yielded 35% of the mono-compound and products derived from splitting of the Si-C_{ar} bond in the phenylmethyldichlorosilane. A

Card 1/2

L 16061-65

ACCESSION NR: AP4046175

1:2 molar ratio led to synthesis of a mixture of mono- and dibromo compounds, as well as $C_6H_4Br_2$, C_6H_5Br , etc. Other ratios were not successful. Splitting was more pronounced and proceeded faster in the presence of catalysts (10-15C). The new mono- and dibromophenylmethyldichlorosilanes, mono- and dibromophenylmethyldiethoxysilanes isolated from the end product are described. It was determined that the CH_3SiCl_2 group directs the bromine atoms mainly towards the ortho and para position on the aromatic ring. "The fundamental analysis was conducted by M. A. Teplyashina's staff, for which the authors wish to express their thanks." Orig. art. has: 1 table

ASSOCIATION: None

SUBMITTED: 18Mar63

ENCL: 00

SUB CODE: CH

NO REF SOV: 009

OTHER: 000

Card 2/2

AUTHORS: Tseylin, L. A., Tarasova, T. Ye. 007/131-49-10-5/1

TITLE: Testing of Graphite Fire-Bricks in Steel Teeming Ladles
(ispytaniya grafito-shamotnogo kirpicha v stalerazlivochnykh kovshakh)

23-

PERIODICAL: Ogneupory, 1958, Nr 10, pp. 461-467 (USSR)

ABSTRACT: A method that makes use of the semi-dry process and of burning without capsules was developed in order to simplify, and economize in, the production of these bricks. The composition and the properties of graphite fire-bricks produced in the UNIIO and Chasov-Yarskiy zavod im. Ordzhonikidze (Chasov Yar imeni Ordzhonikidze Plant) testing plants are listed in tables 1 and 2. Their heat resistance is high. The bricks were tested by lining 7, 60 and 140 ton teeming ladles, in which they did not show any wear at the joints. A.A. Yeltysheva took part in the tests (Fig 1). The use of graphite fire-bricks did not affect the carbon content of the steel. The changed chemical composition of the slag is seen in table 3. In figures 2 and 3 the graphite fire-brick lining of a 140 ton teeming ladle is shown after 9 and 3 castings,

Card 1/2

Testing of Graphite Fire-Bricks in Steel
Teeming Ladles

SGV/131-53-10-5/11

respectively. Table 4 compares the wear of graphite fire-bricks to that of regular fire-bricks. It is practical to use graphite fire-bricks as lining of smaller teeming ladles for casting highly manganiferous steels, i.e. only for the lining of the lower part of the ladle. Further tests with these bricks ought to be carried out. There are 3 figures, 4 tables, and 13 references, 11 of which are Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneporov
(~~Ukrainian~~ Scientific Research Institute for Refractory
Products)

Card 1/2

44870

S/081/62/000/024/068/073
B166/B186

15 2250

AUTHORS: Tseytlin, L. A., Tarasova, T. Ye.

TITLE: Production process for graphite fire clay refractories by the semi-dry method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1962, 578-579, abstract 24K293 (Sb. nauchn. tr. Ukr. n.-i. in-t ogneuporov, no. 2 (52), 1961, 254 - 261)

TEXT: Two processes are described for using the semi-dry method to produce graphite fire clay refractories with an increased graphite content (25 %), having the same strength and lower porosity than similar articles made by plastic pressing. In one process, with the addition of boric acid ~2 % graphite is introduced into the blend directly, in the other takes the form of a graphitized low-fired fire clay. Experimental batches of graphite fire clay ladle brick were produced and tested in 8-ton ladles for teeming high-manganese steel. The article gives the compositions of the masses, chemical characteristics of the starting materials, grain size of the masses, the physical and mechanical characteristics of the raw and
Card 1/2

Production process for graphite ...

S/081/62/000/024/068/075
B166/B186

burned brick, and the composition of the mortars for laying the bricks. A technique for determining the rate of graphite burnout and the abrasability of test specimens is described. The use of plasticized mortars for brick-laying was indicated. Tests show: that brick with a 25 % graphite content produced by the simplified process has high strength, particularly when graphitized fireclay is used; it has the same rate of graphite burnout as brick made by plastic pressing, and a strain onset temperature under load higher than that required by FCC 5341-58 (GOST 5341-58) for multifireclay ladle brick. For lining small ladles for pouring high-manganese steels it is best for economic and other reasons to use graphite fire clay brick made by the first of the above-mentioned processes and containing a smaller amount of graphite. [Abstracter's note: Complete translation.]

X

Card 2/2

TSEYTLIN, L.A.; TARASOVA, T.Ye.

Manufacture of graphite-grog refractories by the stiff-mud
process. Sbor.nauch.trud. UNIIO no.5:254-261 '61. (MIRA 15:12)
(Firebrick)

TSEYTLIN, L.A.; TARASOVA, T.Ye.

Refractory mortars. Standartizatsiia 25 no.9:47-48 S '61.
(MIRA 14:9)

(Refractory materials--Standards)

TSEYTLIN, L.A.; TARASOVA, T.Ye.; KVASHA, A.S.; VOL'FOVSKIY, G.M.;
SHARCHILEV, V.I.; SAKOVSKIY, D.Ya.

Using gunite paste with a phosphate binder base for the hot
repairing of coke ovens. Koks i khim. no.7:33-36 '63.
(MIRA 16:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneporov
(for Tseytlin, Tarasova). 2. Koksokhimstantsiya (for Kvasha,
Vol'fovskiy). 3. Khar'kovskiy koksokhimicheskiy zavod (for
Sharchilev). 4. Gosudarstvennaya inspektsiya po sluzhbe i
kachestvu ogneporov (for Sakovskiy).
(Coke ovens—Maintenance and repair)
(Gunite)

TSEYILIN, L.A.; TARASOVA, T.Ye.

Gunite mixtures with a phosphate binder. Ogneupory 29 no.4:177-182
'64. (MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

GALEH, V.O.; BULACH, V.L.; TARASOVA, I.Ye.

Methods of determining the slag resistance of ladle firebrick.
Ogneupory 30 no.15:31-34 '65. (PIRA 13-10)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

TARASOVA, V., inzhener.

~~Improving the power factor in the Molotov Meat Combine.~~
Mias. ind. SSSR 27 no.4:51-52 '56.

(MLRA 9:10)

1. Molotovskiy myasokombinat.
(Condensers (Electricity))

DZHAVROVA, I.K.; ANTONKIN, E.; BRYNZOVA, Z.; DEMICHEVA, N.; ZERENKOVA, L.;
TARASOVA, V.; YANKEVICH, G.

Comparative evaluation of various media for determining the toxigenic
properties of diphtheria bacilli in vitro. Lab. delo 6 no.4:48 J1-
Ag '60. (MIRA 13:12)

1. Kafedra mikrobiologii Smolenskogo meditsinskogo instituta.
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA) (DIPHTHERIA)

TARASOVA, V.

Conference on the establishment of labor standards in the
synthetic fibers industry. Khim.volok. no.5:79 '61. (MIRA 14:10)

(Textile fibers, Synthetic)

TARASOVA, V.

Under the cross fire of mental alertness. Izobr.i rats. nò.12:
36-37 D '60. (MIRA 13:12)

1. Nachal'nik otdela ratsionalizatsii Permskogo sovnarkhosa.
(Perm--Technological innovations)

IVANOVA, N.M.; KOZHINA, A.D.; PERELYGINA, L.I.; TARASOVA, V.A.;
FURSOVA, Ye.I.; CHEREZOVA, R.S.; SHKOL'NIK, Ye.I.; SHLEIFMAN,
Kh.I.

[Economy of Voronezh Province in 1960; collection of statistics]
Narodnoe khoziaistvo Voronezhskoi oblasti v 1960 godu; statisti-
cheskii sbornik. Voronezh, Voronezhskoe otd-nie Gosstatizdata,
1961. 139 p. (MIRA 15:6)

1. Voronezh. Oblastnoye statisticheskoye upravleniye.
(Voronezh Province--Economic conditions)

L 41402-65

ACCESSION NR: AR5009694

UR/0058/65/000/002/D091/D091

SOURCE: Ref. zh. Fizika, Abs. 2D687

AUTHORS: Tarasova, V. B.; Uspenskiy, V. I.

TITLE: On the determination of the relative photographic activity of color components

CITED SOURCE: Kinotekhnika. Nauchno-tekhn. sb., vyp. 8, 1964, 18-28

TOPIC TAGS: photographic activity, color component, development, image density, image contrast, color purity

TRANSLATION: According to the authors' data, the most correct procedure for determining the photographic activity of color components (CC) is to compare them in terms of the development rates necessary to obtain low image density, when the development kinetics is closest to chemical. The concentrations of the CC in the emulsions should be chosen such that their variation results in most noticeable changes of either the density or the contrast coefficient of the image. This condition is best satisfied by low concentrations, for which both the density and the

Card 1/2

L 41402-65

ACCESSION NR: AR5009694

contrast coefficient increase in proportion to the CC concentration. The determination of the photographic activities of CC by using concentrations that produce an equivalent effect can serve also as a convenient means of determining the degree of purity of the CC as compared with a standard. A. Kartuzhanskiy.

SUB CODE: ES, OP

ENCL: 00

CC
Card 2/2

TARASOVA, Y.F.

Technical organization in the manufacture of viscose cord. Khim.
volok. no.6:60-61 '59. (MIRA 13:5)

1. Kalininskiy kombinat.
(Rayon)

TARASOVA, V.F.

Methods for determining the number of workers required in the
chemical sections of the viscose manufacture. Khim.volok.
no.5:56-59 '61. (MIRA 14:10)

1. Kalininskiy kombinat.
(Textile industry)

TROFIMOV, L.G.; TARASOVA, V.I.; MENCHER, E.M.

Some connections between total electrical resistance of the
dog liver and its function. Biofizika 9 no.4:530-532 '64.
(MIRA 18:3)

1. Tomskiy gosudarstvennyy universitet imeni Kuybysheva.

KARETNIKOV, Yu.P.; TARASOVA, V.N.

Effect of the movement of the medium on incrustation during the
crystallization of salts. Zhur. prikl. khim. 34 no.2:282-287 P 161.
(MIRA 14:2)

(Crystallization)

KARETNIKOV, Yu.P.; TARASOVA, V.N.; ZHIDILEVA, K.P.

Boiling points of sodium sulfide solutions. Zhur.prikl.khim. 34
no.3:682-684, Mr '61. (MIRA 14:5)

(Sodium sulfide)

AUTHOR: Tarasova, V.P., Engineer.

104-4-30/40

TITLE: Increase in the operating life of phosphate pumps.
(Uvelichenie prodolzhitelnosti raboty fosfatnykh nasosov)

PERIODICAL: "Elektricheskie Stantsii" (Power Stations), 1957,
Vol. 28, No.4, p. 85 (U.S.S.R.)

ABSTRACT: During the operation of phosphate pumps deposits of phosphate were found to interfere with the operation of packing glands. This was overcome by installing a mechanical filter with gravity feed which is described. The filter has
1/1 to be washed down about once a month.

AVAILABLE:

TARASOVA, V.P.; DROZDOV, V.T.; KONDAKOV, V.V., kand.ekonom.nauk;
SUVORINA, T.M., red.; FILIPPOVA, K.G., tekhn.red.

[Economic problems of technological progress; based on industrial materials of Perm Province] Ekonomicheskie problemy tekhnicheskogo progressa; po materialam promyshlennosti Permskoi oblasti. Sbornik statei. Perm', Permskoe knizhnoe izd-vo, 1960. 262 p.

(MIRA 14:1)

(Perm Province--Technology)

2

M

On the Solubility Limits of the α -Phase in Copper-Tin Alloys. S. T. Kono-
bavskiy and V. P. Tarnova (*Zhurnal eksperimental'noy i teoreticheskoy fiziki*
(*J. Exper. and Theoret. Physics*), 1934, 4, 272-291).—[In Russian.] Annealing
of copper-tin alloys at 300° C. results in the decomposition of the α -solid
solution with separation of a new phase and change in concentration from 8.5
to 4 atomic-% tin. The solubility of tin in the α -solid solution at 650°, 500°,
and 480° C. is 8.6, at 410° C. 8.0, at 385° C. 7.2, at 343° C. 6.6, at 325° C. 6.1,
and at 300° C. 4.1 atomic-% tin. From the point of view of the mechanism of
the diffusion process the presence of heterogeneous stresses in the deformed
crystals must give rise in a certain temperature range to definite concentration
currents and therefore to the separation of nuclei of the excess solute. The
shape of the solubility curve obtained is explained by assuming that the solid
solution of tin in copper in the equilibrium state must obey the general thermo-
dynamic expression for solutions: $\ln S = -\frac{Q}{RT} + C$ and that the boundary
curve corresponds with the equilibrium of the β (γ) phase with the α -solid
solution of a definite degree of supersaturation determined by the size of the
separated β (γ) particles. On the basis of these hypotheses the size and
number of the crystals formed during decomposition have been determined in
relation to the annealing temperature and degree of supersaturation. Theo-
retical calculations have also been made of the rate of dissolution of the β (γ)
phase in relation to the annealing temperature and compared with the experi-
mental figures.—N. A.

ASB-566 METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED SERIALIZED FILED

SEP 1964

U.S. DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

<p>ca</p>																										<p>9</p>																									
<p>Measuring residual tensions in iron castings. A. R. El'nikov and V. P. Tarasova. <i>Zavodskaya Lab.</i> 4, 660-74 (1935).—In this preliminary communication a method of acoustic measurement of the residual tensions of Fe castings with the aid of a generator (illustrated) with a continuous scale of sound frequencies is described. (Has. Blau)</p>																																																			
<p>ASB-35A METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

382

383

384

385

386

387

388

389

390

391

392

393

394

395

396

397

398

399

400

401

402

403

404

405

406

407

408

409

410

411

412

413

414

415

416

417

418

419

420

421

422

423

424

425

426

427

428

429

430

431

432

433

434

435

436

437

438

439

440

441

442

443

444

445

446

447

448

449

450

451

452

453

454

455

456

457

458

459

460

461

462

463

464

465

466

467

468

469

470

471

472

473

474

475

476

477

478

479

480

481

482

483

484

485

486

487

488

489

490

491

492

493

494

495

496

497

498

499

500

501

502

503

504

505

506

507

508

509

510

511

512

513

514

515

516

517

518

519

520

521

522

523

524

525

526

527

528

529

530

531

532

533

534

535

536

537

538

539

540

541

542

543

544

545

546

547

548

549

550

551

552

553

554

555

556

557

558

559

560

561

562

563

564

565

566

567

568

569

570

571

572

573

574

575

576

577

578

579

580

581

582

583

584

585

586

587

588

589

590

591

592

593

594

595

596

597

598

599

600

601

602

603

604

605

606

607

608

609

610

611

612

613

614

615

616

617

618

619

620

621

622

623

624

625

626

627

628

629

630

631

632

633

634

635

636

637

638

639

640

641

642

643

644

645

646

647

648

649

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

665

666

667

668

669

670

671

672

673

674

675

676

677

678

679

680

681

682

683

684

685

686

687

688

689

690

691

692

693

694

695

696

697

698

699

700

701

702

703

704

705

706

707

708

709

710

711

712

713

714

715

716

717

718

719

720

721

722

723

724

725

726

727

728

729

730

731

732

733

734

735

736

737

738

739

740

741

742

743

744

745

746

747

748

749

750

751

752

753

754

755

756

757

758

759

760

761

762

763

764

765

766

767

768

769

770

771

772

773

774

775

776

777

778

779

780

781

782

783

784

785

786

787

788

789

790

791

792

793

794

795

796

797

798

799

800

801

802

803

804

805

806

807

808

809

810

811

812

813

814

815

816

817

818

819

820

821

822

823

824

825

826

827

828

829

830

831

832

833

834

835

836

837

838

839

840

841

842

843

844

845

846

847

848

849

850

851

852

853

854

855

856

857

858

859

860

861

862

863

864

865

866

867

868

869

870

871

872

873

874

875

876

877

878

879

880

881

882

883

884

885

886

887

888

889

890

891

892

893

894

895

896

897

898

899

900

901

902

903

904

905

906

907

908

909

910

911

912

913

914

915

916

917

918

919

920

921

922

923

924

925

926

927

928

929

930

931

932

933

934

935

936

937

938

939

940

941

942

943

944

945

946

947

948

949

950

951

952

953

954

955

956

957

958

959

960

961

962

963

964

965

966

967

968

969

970

971

972

973

974

975

976

977

978

979

980

981

982

983

984

985

986

987

988

989

990

991

992

993

994

995

996

997

998

999

1000

1001

1002

1003

1004

1005

1006

1007

1008

1009

1010

1011

1012

1013

1014

1015

1016

1017

1018

1019

1020

1021

1022

1023

1024

1025

1026

1027

1028

1029

1030

1031

1032

1033

1034

1035

1036

1037

1038

1039

1040

1041

1042

1043

1044

1045

1046

1047

1048

1049

1050

1051

1052

1053

1054

1055

1056

1057

1058

1059

1060

1061

1062

1063

1064

1065

1066

1067

1068

1069

1070

1071

1072

1073

1074

1075

1076

1077

1078

1079

1080

1081

1082

1083

1084

1085

1086

1087

1088

1089

1090

1091

1092

1093

1094

1095

1096

1097

1098

1099

1100

1101

1102

1103

1104

1105

1106

1107

1108

1109

1110

1111

1112

1113

1114

1115

1116

1117

1118

1119

1120

1121

1122

1123

1124

1125

1126

1127

1128

1129

1130

1131

1132

1133

1134

1135

1136

1137

1138

1139

1140

1141

1142

1143

1144

1145

1146

1147

1148

1149

1150

1151

1152

1153

1154

1155

1156

1157

1158

1159

1160

1161

1162

1163

1164

1165

1166

1167

1168

1169

1170

1171

1172

1173

1174

1175

1176

1177

1178

1179

1180

1181

1182

1183

1184

1185

1186

1187

1188

1189

1190

1191

1192

1193

1194

1195

1196

1197

1198

1199

1200

1201

1202

1203

1204

1205

1206

1207

1208

1209

1210

1211

1212

1213

1214

1215

1216

1217

1218

1219

1220

1221

1222

1223

1224

1225

1226

1227

1228

1229

1230

1231

1232

1233

1234

1235

1236

1237

1238

1239

1240

1241

1242

1243

1244

1245

1246

1247

1248

1249

1250

1251

1252

1253

1254

1255

1256

1257

1258

1259

1260

1261

1262

1263

1264

1265

1266

1267

1268

1269

1270

1271

1272

1273

1274

1275

1276

1277

1278

1279

1280

1281

1282

1283

1284

1285

1286

1287

1288

1289

1290

1291

1292

1293

1294

1295

1296

1297

1298

1299

1300

1301

1302

1303

1304

1305

1306

1307

1308

1309

1310

1311

1312

1313

1314

1315

1316

1317

1318

1319

1320

1321

1322

1323

1324

1325

1326

1327

1328

1329

1330

1331

1332

1333

1334

1335

1336

1337

1338

1339

1340

1341

1342

1343

1344

1345

1346

1347

1348

1349

1350

1351

1352

1353

1354

1355

1356

1357

1358

1359

1360

1361

1362

1363

1364

1365

1366

1367

1368

1369

1370

1371

1372

1373

1374

1375

1376

1377

1378

1379

1380

1381

1382

1383

1384

1385

1386

1387

1388

1389

1390

1391

1392

1393

1394

1395

1396

1397

1398

1399

1400

1401

1402

1403

1404

1405

1406

1407

1408

1409

1410

1411

1412

1413

1414

1415

1416

1417

1418

1419

1420

1421

1422

1423

1424

1425

1426

1427

1428

1429

1430

1431

1432

1433

1434

1435

1436

1437

1438

1439

1440

1441

1442

1443

1444

1445

1446

1447

1448

1449

1450

1451

1452

1453

1454

1455

1456

1457

1458

1459

1460

1461

1462

1463

1464

1465

1466

1467

1468

1469

1470

1471

1472

1473

1474

1475

1476

1477

1478

1479

1480

1481

1482

1483

1484

1485

1486

1487

1488

1489

1490

1491

1492

1493

1494

1495

1496

1497

1498

1499

1500

1501

1502

1503

1504

1505

1506

1507

1508

1509

1510

1511

1512

1513

1514

1515

1516

1517

1518

1519

1520

1521

1522

1523

1524

1525

1526

1527

1528

1529

1530

1531

1532

1533

1534

1535

1536

1537

1538

1539

1540

1541

1542

1543

1544

1545

1546

1547

1548

1549

1550

1551

1552

1553

1554

1555

1556

1557

1558

1559

1560

1561

1562

1563

1564

1565

1566

1567

1568

1569

1570

1571

1572

1573

1574

1575

1576

1577

1578

1579

1580

1581

1582

1583

1584

1585

1586

1587

1588

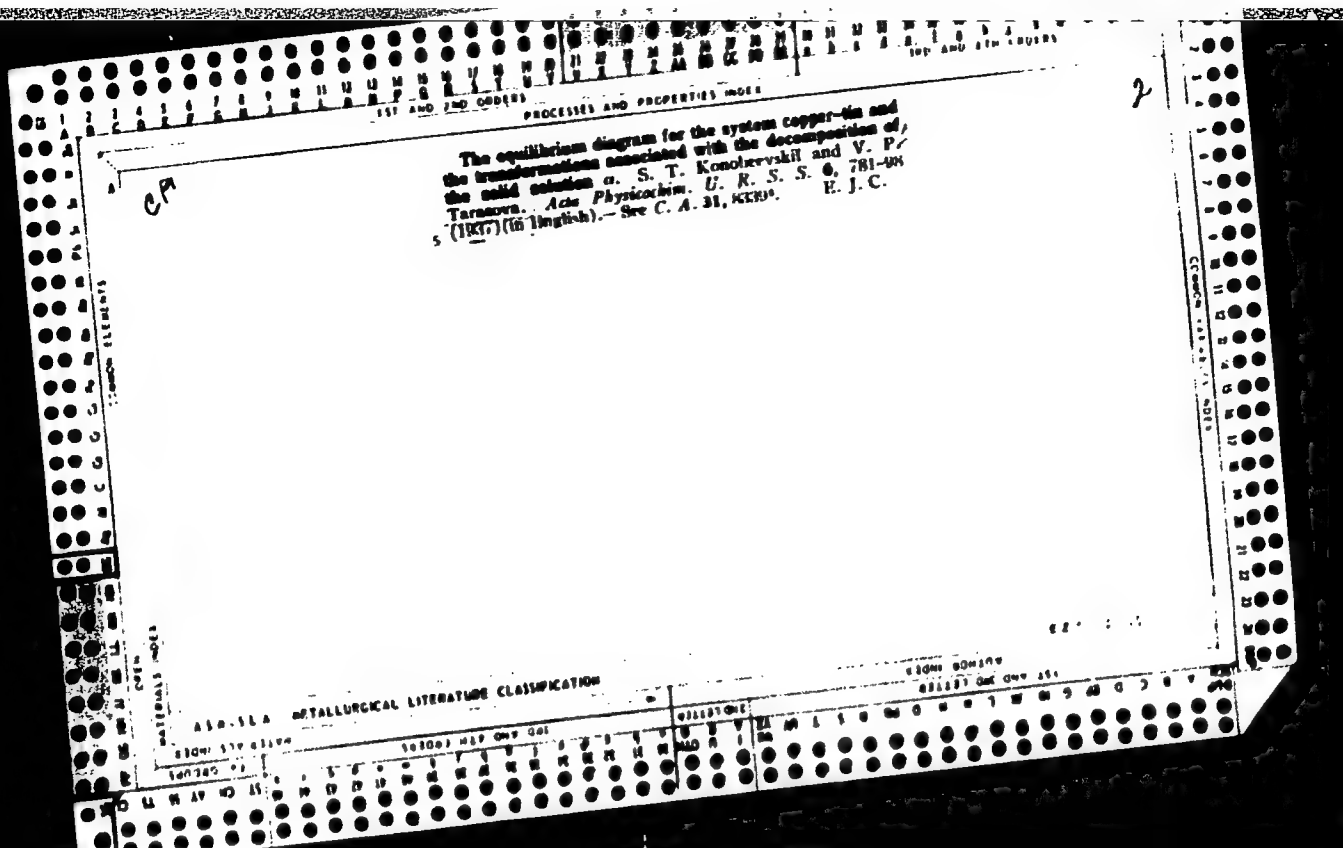
1589

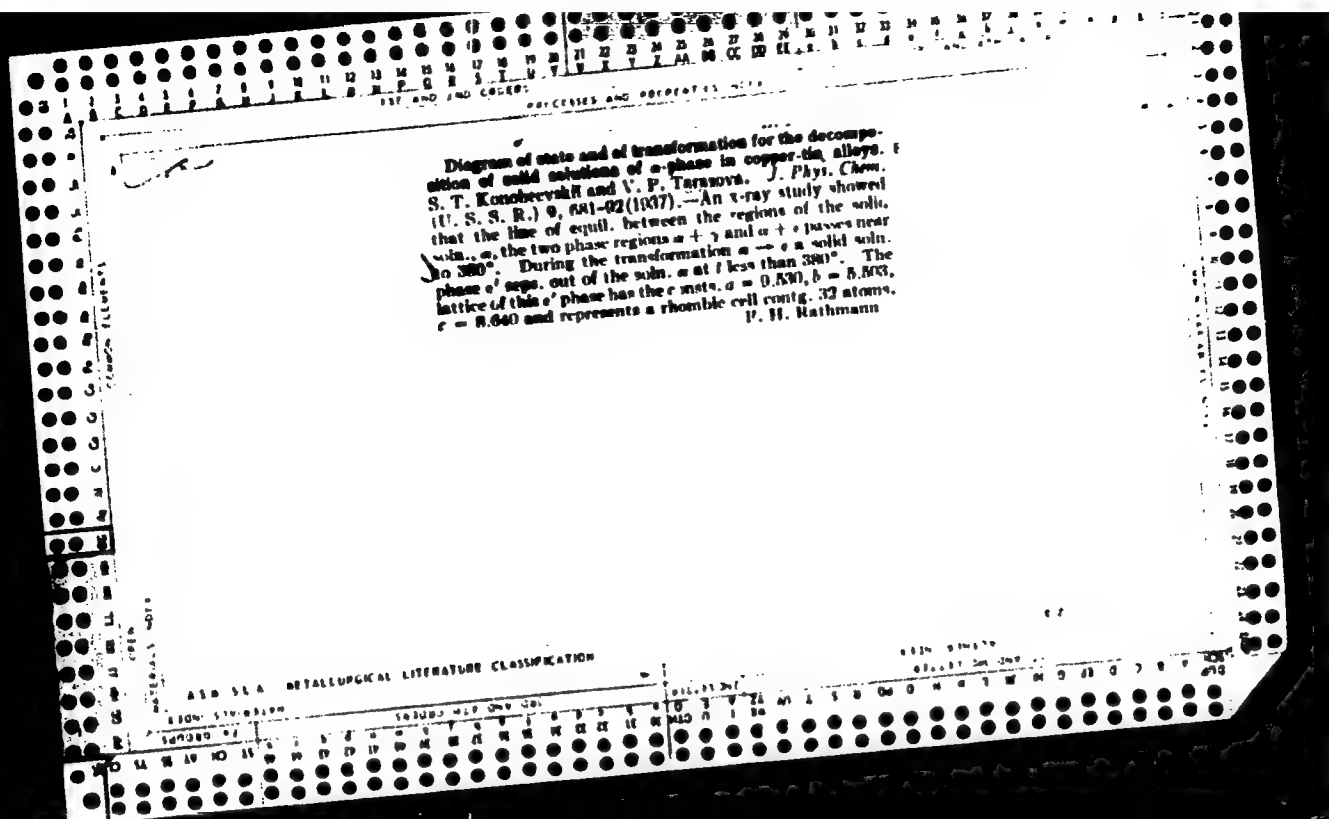
1590

1591

1592

1593





A-1

BC

X-Ray determination of the solubility of the α -phase in the ternary system copper-zinc-tin at low temperatures. S. T. KOKORSEVSKI, V. P. TARASOVA, and A. A. BRIZAKOVA (J. Phys. Chem. Russ., 1937, 9, 693-703).—The transformation of the α -phase on annealing has been studied in relation to previous thermal and mechanical treatment (quenching, slow cooling, deformation). The transformation is accelerated by deformation. E. R.

ASME-SEA METALLURGICAL LITERATURE CLASSIFICATION

SECTION 1: 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SECTION 2: 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SECTION 3: 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SECTION 4: 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

9

Temperature dependence of the solubility limits of α phases in copper alloys. V. P. Farnsworth. Vestnik Morsk. Univ. 1947, No. 4, 105-7 (in Russian). -The equil. solid soly. limits were detd. by x-rays down to 170° with an accuracy of 0.1 at. %. In Cu-Sn, Cu-Sb, Cu-Si, and Cu-Zn, a strong temp. dependence was demonstrated: the soly. of Sn in Cu falls from 8.5 at. % at 500° to 1.0 at 218°; Sb falls from 5.9 at 500° to 0.4 at 170°; Si from 9.8 at 500° to 2.45 at 170°. The curves for Cu-Sn and Cu-Sb show the theoretical universal soly. curve of Konobeevskii (C.A. 31, 8330°) in its entirety; the branch below 300° is in agreement with $\ln c = A - (B/T)$ while the branch over 400-450° is practically vertical (const. soly.). Cu-Si and Cu-Zn do not show the logarithmic portion which might possibly exist at still lower temp. In Cu-Al, soly. is const. between 600 and 350°; at 290° x-ray patterns show, instead of doublet lines, diffuse triplets, not yet explained. N. Thom

CA

Structures of some compounds of rare earth elements
V. I. Iveronova, V. P. Tarasova, and M. M. Umanskii
(Moscow Univ.). *Vestnik Moskov. Univ.* 6, No. 8, Ser.
Fiz.-Mat. i Estestven. Nauk No. 5, 37-60 (1951).—See C.A.
65, 9841g.
K. L. C.

PA 187T88

USSR/Physics - Rare Earths

Mar/Apr 51

"Investigation of the Structure of Some Compounds of Rare-Earth Elements," V. I. Iveronova, V. P. Tarasova, M. M. Umanskij, Res Inst of Phys, Moscow State U

"Iz Ak Nauk SSSR, Ser Fiz", Vol XV, No 2, pp 164-168

Obtained size and shape of elementary cells of some compounds of the cerium group by X-ray analysis. Determined spatial groups and location of heavy atoms in some compounds and tabulated results. Authors were assisted by I. D. Borneman-Starinkevich,

187T88

LC

Mar/Apr 51

USSR/Physics - Rare Earths (Contd)

S. S. Kvitka and A. A. Stepanova. Submitted at 3d All-Union Conference on Use of X-rays in Study of Materials held 19 - 24 Jun 50 in Leningrad.

LC

187T88

TARASOVA, V. P.

7 7
 Determination of the specific gravity and heat conductivity
 of flotation pyrite cinders. E. M. Lyashina and V. M.
 Tarasova. *Trudy Ural. Nauch.-Issledovatel. Khim. Inst.*
 1954, No. 1, 225-9; *Referat. Zhur., Khim.* 1955, Abstr. No.
 56019. —The sp. gr. of the flotation pyrite cinders (the pyrite
 concentrate) are detd. with a pycnometer in toluene and in
 water. It is necessary to evacuate the air from the partly
 liquid-filled pycnometer (for the air removal from the pores of
 the cinder particles) thus improving the detn. precision by
 ~20%. Water gives slightly higher results because of the
 soly. of some sulfates contained by the cinders. Depending
 on the S content in the pyrite, the sp. gr. of the cinders
 changes from 3.926 at 40% S to 4.78 at 61% S. The coeff.
 of heat cond. λ , and the coeff. of heat emission α of the
 cinders are detd. by the tube method (Mikheev and Osnovy
 Teplo-peredachi, Gosenergoizdat 1947). Depending on the
 temp. of the cinders λ (in cal./m. hr. degree) changes from
 0.8 at 200° to 0.88 at 700°; α (in cal./sq. m. hr. degree)
 changes depending on the temp. of the tube wall from 13 at
 110° to 27 at 320°. A linear relation is established between
 λ , α , and the temp.
 N. Vasileff

5
 1-4E4j

LM

Tarasova, V. P.

USSR.

5278

STRUCTURE OF NITRATE COMPOUNDS OF RARE EARTH
ELEMENTS. V. I. Iveronova, V. P. Tarasova, Z. K. Zolins,
G. V. Markhasia, and I. M. Sukhodreva (Moscow State Univ.)
Zhur. Fiz. Khim. 29, 314-15 (1955) Feb. (in Russian)

Triclinic lattice constants for $\text{La}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$, $\text{Ce}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$, and $\text{Sm}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$ are presented and the structure of these and nitrates of other rare earths are discussed.
(G.Y.)

TARASOVA, V. P.

USSR Solid State Physics - Structural Crystallography

E-4

'Abs Jour : Ref Zhur - Fizika, No. 5, 1957 #11606.

,Author : Grayevskaya, Ya. I., Iveronova, V.I., Tarasova, V.P.

Inst : Moscow University, USSR.

Title : Specialized Setup for the Determination of the Intensities
of X-ray Reflections with the Aid of Geiger Counters.

Orig Pub : Kristallografiya, 1956, 1, No.4, 442 - 445.

Abstract : Description of the operation of a simplified setup for the
measurement of the integral intensities of X-ray diffraction
reflections. The setup is assembled out of standard in-
struments: X-ray apparatus type URS-55, PS-64 electronic
counting circuit, Geiger counters and mechanical counters.
The high voltage and the plate currents are not stabilized.
To fix the intensities of the primary X-ray beam, a Geiger

Card: 1/2

TARASOVA V.M.

USSR / Solid State Physics - Structural Crystallography

E-4

' Abs Jour : Ref Zhur - Fizika, No. 5, 1957 #11606.

' Abstract : counter is used to record the intensity of the beam, diffracted by an aluminum foil placed for "through transmission." For the monochromatization of the primary beam, use was made of a pentaerythritol crystal (reflecting plane (002)), grown out of powder. The goniometric portion of the setup was mounted on a circular optical bench OSK-1.

Card: 2/2

S/188/60/000/004/017/018/XX
B006/B067

AUTHORS: Grayevskaya, Ya. I., Iveronova, V. I., Tarasova, V. P.

TITLE: The Dependence of the Characteristic Temperature Determined
by X-Ray Analysis on the Tin Concentration in Solid Cu-Sn
Solutions 27 — 27

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika,
astronomiya, 1960, No. 4, pp. 52 - 58

TEXT: The authors report on measurements of the characteristic
temperature θ_p in Cu-Sn alloys within a wide concentration range. These
alloys were chosen because their modulus of elasticity ΔE varies con-
siderably with concentration ($\Delta E/\Delta C = 500 \text{ kg/mm}^2$ per at% Sn). The
characteristic temperatures were determined by X-ray analysis from the
intensity ratios of the CuK(133) line at room temperature and at -196°C .
For these measurements the authors chose copper-tin alloys in the α -phase
with 2.35 at% tin (2 samples), 4.73 at% (2 samples), and 7.1 at% Sn
(3 samples). The samples were produced from electrolytic copper and high-

Card 1/3

The Dependence of the Characteristic Temperature Determined by X-Ray Analysis on the Tin Concentration in Solid Cu-Sn Solutions

S/188/60/000/004/017/018/XX

B006/B067

purity tin, and were annealed for 24 - 48 hours at about 50°C. The degree of homogeneity was determined from the distinctness of the (133-024) doublet of X-ray powder patterns. A Geiger counter was used for the measurements. A curved quartz crystal served as a monochromator. The intensity of the monochromatic beam was checked by a monitor counter. Fig. 1 illustrates the concentration dependence of θ_p . With increasing

tin concentration, θ_p rapidly decreases. The same holds for the quantity $m\theta_p^2$ which is proportional to the modulus of elasticity of the binding forces of the atoms (Fig. 2). θ_p and E are connected by the relation

$$\theta = \frac{h\sqrt{3}}{k} \left(\frac{3N}{4\pi} \right)^{1/3} \frac{E^{1/2}}{M^{1/3} \rho^{1/6} f^{1/2}(\sigma)} \quad (h - \text{Planck's constant, } k - \text{Boltzmann}$$

constant, N - Avogadro constant, M - atomic weight, ρ - density, $f(\sigma)$ - function of the Poisson ratio). At low tin concentrations, also the

relation $\theta = K\sqrt{E}$ may be used, which leads to $\frac{\Delta\theta_p}{\Delta\theta_p} = \frac{1}{2} \frac{\Delta E}{\Delta E} = 2.0 \cdot 10^{-2}$ or

Card 2/3

The Dependence of the Characteristic
Temperature Determined by X-Ray Analysis on
the Tin Concentration in Solid Cu-Sn Solutions

S/188/60/000/004/017/018/XX
B006/B067

$1.8 \cdot 10^{-2}$ per at% Sn are obtained, whether 500 (Ref. 14) or 450 kg/mm^2 are assumed for $\Delta E/\Delta C$ per at% Sn (Ref. 15). Fig. 3 shows $\theta^2 = f(a)$ and Fig. 4 $\Delta E/\Delta C = f(\Delta T/\Delta C)$. The root-mean-square error of the determination of θ_p was $\sim 1\%$. The authors thank N. Ye. Kravchenko for his help in the measurements. There are 4 figures and 15 references: 11 Soviet, 2 US, and 1 German. ✓

ASSOCIATION: Kafedra obshchey fiziki dlya fizikov (Chair of General
Physics for Physicists)

SUBMITTED: February 22, 1960

Card 3/3

L 58530-65 EWT(m)/EWP(b)/EWP(t) IJP(o) JD UR/0181/65/007/005/1342/1348
 17
 18
 8
 ACCESSION NR: AP5012539
 AUTHOR: Grayevskaya, Ya. I.; Iveronova, V. I.; Tarasova, V. P.
 TITLE: Characteristic temperature of copper and of Cu-Sn alloys as determined from
 measurements of the temperature factor of x-ray scattering 27 27
 SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1342-1348
 TOPIC TAGS: characteristic temperature, copper tin alloy, Debye temperature, x ray
 scattering
 ABSTRACT: This is a continuation of earlier work by the authors (Vestn. MGU No. 4,
 52, 1960) in which the authors measured the Debye temperature Θ_r by x-ray diffrac-
 tion methods and compared it with the change in Young's modulus in Cu-Sn alloys of
 various concentrations. In view of the observed dependence of Θ_r on the tempera-
 ture and on the annealing time, the authors continued the measurements and studied
 the dependence on the annealing time and annealing temperature for alloys with con-
 centrations 2.35, 4.73, and 7.1 at. % Sn, and also pure copper. The values of Θ_r
 were determined from diffraction measurements by the same method as in the earlier
 work. The samples were prepared from filings obtained at room temperature. The

Card 1/2

L 58530-65

ACCESSION NR: AP5012539

annealing temperature ranged from 385 to 500C. The samples were plastically deformed and isothermically annealed. The results are tabulated. They show that during the course of annealing the x-ray-scattering temperature factor goes through a maximum, and consequently the Debye temperature calculated by the Debye-Waller formula goes to a minimum. Although the variation of Θ_D is unquestionably established, the causes of the variation need further explanation. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 09Oct64

ENCL: 00

SUB CODE: 88, NP

NR REF SOV: 006

OTHER: 000

Card 2/2

1948. Changes in opsonin-phagocyte index after blood transfusion. 9/14
E. I. Demikhovskii and V. S. Farse. *Trudy Vsesoyuznogo nauchnogo tsentra* No. 10,
1948. 929-932. Refers to D. W. Jones. The opsonin-phagocyte index was
with various somatic diseases. The index was determined after repeated transfusions.
transfusion in 30.9% of cases the index was raised, in 47% it was
from 1-5, in 22% 6-10. It was also less than 10. After
transfusion the index was raised in 68 cases (80.2%), in 5 cases
it was raised after the first transfusion and after further trans-
fusions was lowered, in 2 cases the reverse picture was observed.
and in 3 cases there was no regular change in the index. (Russian)
D. H. SMYTH.

TARASOVA, V.S.
DEMIKHOVSKIY, Ye.I.; TARASOVA, V.S.

Effect of the immunisation process on the opsonocytophagic index in experimental animals; author abstract. Zhur. mikrobiol. epid. i immun. 28 no.2:77-78 P '57 (MLRA 10:4)

1. Iz kafedry mikrobiologii Dnepropetrovskogo meditsinskogo instituta.

(VACCINATION) (PHAGOCYTOSIS)

ALEKSEYEV, N.A.; BUZ'KO, M.P.; IPPOLITOV, K.M.; PALKIN, R.I.; SIMONOVICH,
Ye.Ya.; TARASOVA, V.S.; TITKOVA, M.G.; ALEKSEYEV, N.A., otv. za
vypusk; GALAKTIONOVA, Ye.N., tekhn.red.; DONSKAYA, G.D., tekhn.red.

[Provisional norms for the use of materials and spare parts in
repairing road machinery and tractors] Vremennyye normy rasshoda
materialov i zapasnykh chastei dlia remonta dorozhno-stroitel'nykh
mashin i traktorov. Moskva, Avtotransizdat, 1960. 380 p.

(MIRA 13:10)

1. Russia (1917- R.S.F.S.R.) Ministerstvo avtomobil'nogo transporta
i shosseynykh dorog. Tsentral'naya normativno-issledovatel'skaya
stantsiya.

(Road machinery--Maintenance and repair)

(Tractors--Maintenance and repair)

CHAPLYGIN, B.K.; TARASOVA, V.S.

Propagation of bay laurel by green cuttings in greenhouses
under polyethylene film. Biul. Glav. bot. sada no. 42:100-102
'61. (MIRA 17:3)

1. Glavnyy botanicheskiy sad A^N SSSR.

1. TARASOVA, V. V., ZAYTSEVA, N. P.
2. USSR (600)
4. Plavsk District-Coal
7. Preliminary report of the Plavsk geological surveying party of the Moscow coal expedition in 1944 on the geological structure of the Plavsk, Krapivna, Shchekino, and Lazarevo Districts (sheet N-37-75, scale 1:100,000).
[Abstract.] Izv. Glav. upr. geol. fon. No. 2, 1947
9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

1. TARASOVA, V. V.: ZAYTSEVA, N. P.
2. USSR (600)
4. Shchekino District - Coal
7. Preliminary report of the Plavsk geological surveying party of the Moscow coal expedition in 1944 on the geological structure of the Plavsk, Krapivna, Shchekino, and Lazarevo Districts (sheet N-37-75, scale 1:100,000) Abstract. Izv. Glav. upr. geol. fon. no. 2, 1947.
9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

LUKATSKAYA, I.A.; TARASOVA, V.Ya.

Pulse X-ray tube with an operating voltage of 17 -- 20 kv.
Prib. 1 tekhn. eksp. 8 no.6:124-127 N-D '63. (MIRA 17:6)

1. Vsesoyuznyy elektrotekhnicheskiy institut.

EBIN, L.Ye.; GANELIN, A.M.; GILINSKIY, A.M.; GORNOVESOV, G.V.; ZLATKOVSKIY, A.P.; KAUFMAN, B.M.; KISELEV, N.A.; KULIKOV, P.Ye.; LEVIN, M.S.; SLAVIN, M.P.; SMIRNOV, B.V.; SMIRNOV, V.I.; SMIRNOVA, I.S.; TARASOVA, V.Ye.; CHEBOTAREV, V.I.; SHATS, Ye.L.; EHTIN, I.A.; IOSIPIYAN, S.G.; redaktor; SARKISIAN, A.M., redaktor; SMIRENSKIY, M.D., redaktor; TEPLITSKIY, Ya.S. redaktor; KOMAROVA, V.M., redaktor; GURNEVICH, M.M., tekhnicheskii redaktor.

[Rules for the operation of electric installations in rural areas]
Pravila tekhnicheskoi ekspluatatsii sel'skikh elektroustanovok.
Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 183 p. (MIRA 10:4)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye sel'skikh elektro-
stantsii.
(Electric power plants) (Electricity in agriculture)

Tarasova, V. Ye.

TARASOVA, V. Ye., inzh.

Using waste heat from condensation locomobile power generators.
Mekh. i elek. sots. sel'. khoz. no. 6: 34-38 '57. (MIRA 10:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii
sel'skogo khozyaystva.

(Electric generators)

TARASOVA, V.Ye., insh.

Investigating the operation of condenser steam engines for
combined agricultural power supply. [Nauch.trudy] VIESKH
3:379-396 '58. (MIRA 13:4)
(Steam engines)

С.И.И.

S/196/61/000/006/008/014

E073/E535

11.7350

AUTHORS: Agafonova, F.A., Gurevich, M.A. and Tarasova, Ye.F.

TITLE: Conditions of stability of combustion of individual droplets of liquid fuel

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, 1961, No.6, p.8, abstract 6G55 (Sb. 3-e Vses. soveshchaniye po teorii gorennya. T.2., M., 1960, 29-39)

TEXT: In analysing the operation of liquid fuel fired furnaces, it is important to know whether the fuel drops are in the state of combustion or evaporation. Under these conditions the speeds of evaporation of the drops may differ by several times and this greatly influences the length of the flame. It was observed repeatedly that the diffusion theory is not suitable for analysis of the conditions of ignition and extinction. An approximate analysis of the conditions of ignition, extinction and completeness of combustion is possible if the final reaction speed is taken into consideration. An equation of heat and mass transfer, taking into consideration the chemical reactions, is given which was compiled Card 1/3

X

21112

S/196/61/000/006/008/014

E073/E535

Conditions of stability of ...

on the assumption that the process of combustion develops within the limits of a spherical layer (reduced film). The process of combustion and transfer are assumed as being quasi-stationary and the physical constants as not being dependent on the temperature and the local composition of the mixture. In principle, solution of the derived equations should enable obtaining relations between the parameters which determine the conditions of ignition and extinction of a drop, the maximum temperature and the fraction of unburned vapours for any condition of combustion of the drop. However, the large number of parameters and the laboriousness of the calculations hardly permits using them on a large scale. Therefore, in addition to analysing the equations, experimental work was carried out for the purpose of verifying the main conclusions and for accumulating data on the stability of combustion of drops. Gasoline drops of 0.2 to 0.5 diameter were fed into a vertical furnace by means of a special dropper. At the entry into the furnace, the drops were ignited by a gas flame and burned completely in the furnace. The gas sucked from the furnace was bubbled through a solution of sodium nitrate in concentrated

Card 2/3

Conditions of stability of ...

24112
S/196/61/000/006/008/014
E073/E435

sulphuric acid. Under the influence of hydrocarbon vapours, this solution became yellow; this occurred in all the experiments. A dependence of the fraction of unburned vapours on the flow speed was established. A series of tests were made for determining the limits of stability of combustion of the drops. Gasoline and kerosene drops with initial diameters of 1.5 to 2 mm on a quartz suspension device were used. Dependences were established of the "tear-away" speed of the flow on the temperature of the air and on the content by volume of oxygen in the stream. It was found that the "tear-away" speeds for falling drops are considerably higher than for suspended ones. 7 references.
Abstracted by S. Tager.

[Abstractor's Note: Complete translation.]

Card 3/3

TARASOVA, Ye. F.

Course of tuberculosis of the lungs in tuberculous meningitis.
Probl. tub. no.3:53-58 '62. (MIRA 15:4)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta tuberkuleza
(dir. - kandidat meditsinskikh nauk V. F. Chernyshev, zam. dir. po
nauchnoy chasti - prof. D. D. Asseyev) Ministerstva zdravookhraneniya
RSFSR.

(TUBERCULOSIS) (MENINGES--TUBERCULOSIS)

ADAFONOVA, Y. A.; GUREVICH, M. A.; TARASOVA, Ye. P.

"Self-ignition and drop induction period of liquid fuel."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12
May 1964.

Leningrad Polytechnic Inst.

TARASOVA, Ye.F.

Tuberculosis control work in villages of Moscow Province. Probl.
tub. no.1:9-14 Ja-F '54. (MLRA 7:3)

1. Is organisatsionno-metodicheskogo otdela (zaveduyushchiy N.L. Avrushevich) Moskovskogo oblastnogo nauchno-issledovatel'skogo tuberkuleznogo instituta (ispolnyayushchiy obyazannost' direktora N.P.Gurskiy, zamestitel' direktora po nauchnoy chasti - doktor meditsinskikh nauk D.D.Aseyev).

(Moscow Province--Tuberculosis--Prevention) (Prevention--
Tuberculosis--Moscow Province) (Medicine, Rural)

ANSHELES, I.M.; FRIDMAN, E.A.; STENINA, Ye.S.; KLUSHINA, T.A.; TARASOVA,
Ye.F.; KHAZANSON, L.B.

Epidemiological and virological characteristics of the influenza
pandemic of 1957 in Leningrad. Trudy Len.inst.epid.i mikrobiol.
17:66-77 '58. (MIRA 16:2)

1. Iz sektora epidemiologii (zav. I.M. Ansheles) i laboratorii
grippe (zav. E.A. Fridman) Leningradskogo instituta epidemiologii,
mikrobiologii i gigiyeny imeni Pastera, Gorodskoy sanitarno-
epidemiologicheskoy stantsii i Protivogrippoznogo kabineta 39-y
polikliniki Dzerzhinskogo rayona, Leningrada.
(LENINGRAD—INFLUENZA)

FRIDMAN, E.A.; MASLENNIKOVA, L.K.; DAVYDOVA, T.N.; TARASOVA, Ye.F.

Some results of a study of the preventive properties of serum from influenza convalescents. Vrach.delo no.6:621-623 Je '59.

(MIRA 12:12)

1. Institut epidemiologii, mikrobiologii i gigiyeny imeni Pastera,
i 39-ya poliklinika Leningrada.

(SERUM)

(INFLUENZA)

ANSHELES, I.M.; FRIDMAN, E.A.; KLUSHINA, T.A.; STENINA, Ye.S.; KHAZENSON, L.B.;
TARASOVA, Ye.F.

Influenza pandemic of 1957 and certain epidemiological and virological
characteristics of influenza in Leningrad. Vop. virus 4 no.1: Ja-F '59
(MIRA 12:4)

1. Leningradskiy institut epidemiologii, mikrobiologii i gigiyeny imeni
Pastera, Leningradskaya gorodskaya sanitarno-epidemiologicheskaya stant-
siya i 39-ya poliklinika.

(INFLUENZA, epidemiol.
in Russia (Rus))

L 08553-67 LMP(j)/ENT(m) RM/WW/JW/GD

ACC NR: AT6032000

SOURCE CODE: UR/0000/66/000/000/0241/0251

AUTHOR: Agafonova, F. A. (Leningrad); Gurevich, M. A. (Leningrad);
Tarasova, Ye. F. (Leningrad) 60
55

ORG: none

TITLE: Self ignition and the induction period of liquid fuel droplets

SOURCE: Teplo- i massoperenos, t. 4: Teplo- i massoobmen pri khimi-
cheskikh prevrashcheniyakh v tekhnologii (Heat and mass transfer, v. 4:
Heat and mass transfer during chemical transformations). Minsk, Nauka,
1 tekhnika, 1966, 241-251

TOPIC TAGS: air fuel combustion, hydrocarbon fuel, liquid fuel, igni-
tion, ~~induction period~~, octane, cetane, FUEL IGNITION

ABSTRACT: The ignition of hexane, n-octane, and cetane droplets
(0.0014—0.002 m in diameter) was studied by suspending the droplets
from a quartz filament in a vertical tube through which preheated air
was passed at velocities of 1.3—4.9 m/sec. The ignition process was
studied by motion picture photography and induction time vs air temper-
ature plots were obtained (see Figs. 1 and 2). A theoretical analysis
yielded the following formula for the dimensionless induction time:

Card 1/4

L 08553-67

ACC NR: AT6032000

$$F_0 = \int_{\eta_0}^{\eta_1} \frac{d\theta_0}{\frac{3}{2} \frac{\rho_0}{\rho_1} \frac{c_p}{c_l} \text{Nu} \left(|\theta'_0| - \frac{l}{qn_{01}} \right) \ln \eta_1},$$

where θ_0 is the reduced temperature during the induction period; $\theta'_0 = 1/qn_{k1}$; q , heat of reaction; n_{k1} , oxygen concentration; ρ_1 , density of liquid; ρ_0 , density of gas; c_p , heat capacity of gas; c_l , heat capacity of liquid; $\eta_1 = 1/1-n_{p0}$; and n_{p0} is the concentration of oxygen in vapor. The results of numerical integration for n-octane and cetane are shown in Figures 3 and 4, respectively. It is concluded that the studied fuels cannot ignite at the wet bulb temperature but they always ignite at a lower temperature. The induction time changes with the temperature of the medium faster than the temperature gradient across the droplet-medium interphase. The reduced film model used, which allows for the kinetic resistance, permits the approximate calculation of the ignition limits, the surface temperature of the droplet prior to ignition, and the induction period. Bao Ke-da and I. M. Sulima participated in the work. Orig. art. has: 7 figures, 24 formulas, and 2 tables. [WA No. 68]

Card 2/4

L 08553-67

ACC NR: AT6032000

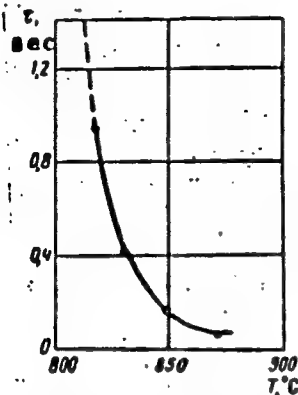


Fig. 1. Induction time of n-octane (0.0015—0.0018 m in diameter) vs air temperature at 4 m/sec (τ is induction time)

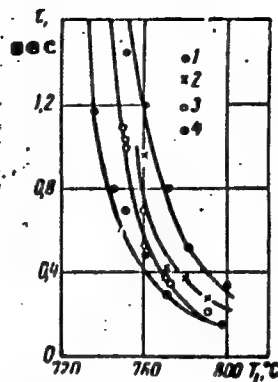


Fig. 2. Induction time of cetane vs air temperature (0.0018—0.002 m in diameter), at flow velocities

1 - 3.8 m/sec; 2 - 3.1 m/sec;
3 - 2.6 m/sec; 4 - 1.3 m/sec.

Card 3/4

L 08553-67

ACC NR: AT6032000

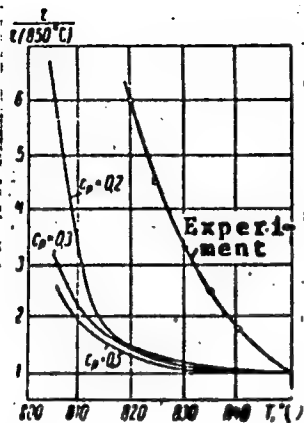


Fig. 3. Numerical integration for octane

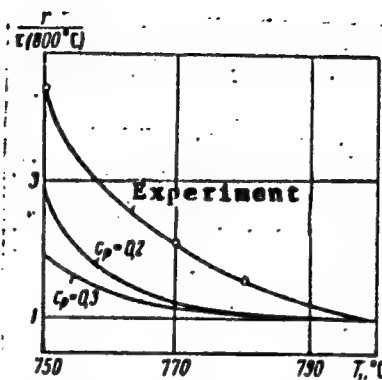


Fig. 4. Numerical integration for cetane

SUB CODE: 21/ SUBM DATE: 25Apr66/ ORIG REF: 003/ OTH REF: 001

ns
Card 4/4

IL'INA, N.P., kand. tekhn.nauk [deceased]; IVANOVA, A.V., mlad.
nauchn. sotr.; SMYSHLYAYEVA, T.N., st. nauchn. sotr.;
TARASOVA, Ye.G., mlad. nauchn. sotr.; SMIRNOV, R.H.,
~~Yakovleva~~; KHENOKH, F.M., tekhn. red.

[Manual on the repair of building facades by using oil-
less (perchlorvinyl and lime) paints]. Rukovodstvo po
remontu fasadov zdaniy s primeneniem bezmaslianykh
(perkhlorvinilovykh i izvestkovykh) krasok. Moskva, 1963.
97 p. (MIRA 16:8)

1. Akademiya kommunal'nogo khozyaystva. 2. Sektor ekspluatatsii
zhilykh i kommunal'nykh zdaniy Akademii kommunal'nogo kho-
zyaystva im. K.D.Pamfilova (for Il'ina, Ivanova, Smyshlyayeva,
Tarasova).

(Painting, Industrial)

Tarasova, Ye. I.

48-12-15/15

AUTHORS: Leyteyzen, L. G. , Berkovskiy, A. G. , Breydo, I. Ya. , Glukhovskoy, B. M. , Korol'kova, O. S. , Tarasova, Ye. I.

TITLE: New Industrial Types of Photoelectron Multipliers (Novyye promyshlennyye tipy fotoelektronnykh umnozhitel'ey)

PERIODICAL: Izvestiya AN SSSR, Seriya Fizicheskaya, 1957, Vol. 21, Nr 12, pp. 1653 - 1659 (USSR)

ABSTRACT: At present the production and delivery of some new photoelectron-multipliers (FEV) worked out by the authors were begun on an industrial scale. They are shortly described here. 1.) The production of the special multiplier for the scintillation-spectrometers $\Phi\Xi\Upsilon$ -29 was recently begun. It has a good amplitude-dissolving power which is guaranteed by the comparatively high sensitivity of the cathodes of the device. The integral sensitivity is higher than $30 \mu A \text{ lm}^{-1}$, on the average $40 - 45 \mu A \text{ lm}^{-1}$, the "blue" one is higher than $6 \mu A \text{ ml}^{-1}$ which corresponds to a quantum discharge of more than 9 % at $\lambda \approx 4000 \text{ \AA}$. Besides the electron-optics at the entrance of the multiplier guarantees a good taking over of the electrons from the cathode to the dynode, as well as minimum losses in the first cascades. The amplitude of the noise, measured in relation to the photoppeak of $\text{Cs}^{137} \rightarrow \text{NaJ(Tl)}$ on the 50

Card 1/4

48-12-15/15

New Industrial Types of Photoelectron Multipliers

impulse sec^{-1} -level, is not higher than $5 \pm 8 \text{ keV}$. The light-characteristic is linear up to the amplitude of the initial impulse $= 7 - 8 \text{ V}$ at a load of about $50 \text{ k}\Omega$ and a parasitic capacity of $\leq 10 \text{ pF}$, with the method of operation given in the pass filter of the device. The most important operation-parameter of any FEV is the stability. Most of the $\Phi \Xi \gamma -29$ under the usual conditions in the gamma-spectrometers work sufficiently stable. Experiments with dynodes of different alloys are now made for improving the stability. At the same time the influence of technological factors and the construction of dynodes upon the stability of the FEV is also experimentally investigated.

2.) FEV with enlarged cathode. According to the preliminary data these multipliers have the following average static parameters: integral sensitivity of the cathode $35 - 40 \mu \text{ A lm}^{-1}$, the "blue" sensitivity $- 7 \mu \text{ A lm}^{-1}$. Amplification about $(2 \pm 5) \cdot 10^5$ at full voltage of $1400 - 1500 \text{ V}$. At much higher voltages it can attain 10^7 . The density of the heat flow from the cathode on the average amounts to $5 \cdot 10^{-15} \text{ Acm}^{-2}$.

3.) "Time"-FEV. Beside the "general" parameters the minimum scattering according to the time of passage of the "electron-parcel" through the multiplier in the case of a maximum steep front of the initial impulse is also demanded of it. After the modelling of many

Card 2/4

48-12-15/15

New Industrial Types of Photoelectron Multipliers

variants a system was found which guarantees good focusing of the electrons and minimum scattering of the time of flight. The calculations of the maximum time-of-flight gradient in this multiplier system with grid yielded a quantity of $4,4 \cdot 10^{-10}$ sec (at a voltage of 100 V/cascade) which is 3 - 4 times less than in the multiplier-system H4646 (reference 3).

4.) The best ratio of the signal to the background in the wave-range of 5500 to 8000 Å is given by the bismuth-silver-cesium cathodes. The experimental samples of multipliers with such cathodes are produced in two sizes: that of the $\Phi \ni \gamma$ -20 and in a smaller size. The multipliers have 11 cascades. Their integral sensitivity of the cathodes on the average is $45 - 50 \mu A \text{ lm}^{-1}$. The amplification is of the order of magnitude $10^5 - 10^6$ at a full supply-voltage of 1400 - 1600 V. The smaller multiplier is distinguished by a great vibration-strength.

5.) The miniature-FEV. At present a construction was worked out for an eight-cascade-miniature-multiplier $\Phi \ni \gamma$ whose outside diameter is greater than 22,5 mm and whose height is 65 mm without peg. The flat, semi-transparent cathode of antimony-cesium has a working diameter of 18 mm. Its sensitivity is below $25 \mu A \text{ lm}^{-1}$.

Card 3/4

48-12-15/15

New Industrial Types of Photoelectron Multipliers

It guarantees an amplification up to 10^5 at a voltage of 900 - 100V.
The dark currents are of the order of magnitude 10^{-8} A.
There are 8 figures, and 3 references, 1 of which are Slavic.

AVAILABLE: Library of Congress

Card 4/4

AUTHORS: Leyteyzen, L. G., Berkovskiy, A. G., 48-22-55/28
Glukhovskoy, B. M., Korol'kova, O.S., Tarasova, Ye. I.

TITLE: On Some Characteristics of New Industrial Types of the FEU
(Data From the VIIIth All-Union Conference on Cathode Electronics
Leningrad, October 17-24, 1957) (O nekotorykh kharakteristikakh
novykh promyshlennyykh tipov FEU (Materialy VIII Vsesoyuznogo
soveshchaniya po katodnoy elektronike, Leningrad, 17-24 oktya-
brya 1957 g.))

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958
Vol. 22, Nr 5, pp. 513-517 (USSR)

ABSTRACT: In the years from 1956-1957 several types of multistage photo
electronic multipliers (fotoelektronnyy umnozhitel' - FEU) were
worked out and brought to the market. They find application in
various fields of physical research. In this paper some data
on this are given: 1) The main particularities of the new FEU
types; They are given for the following types: a) 13-stage mul-
tiplier of the type FEU-29, b) multiplier of the type FEU-24.
a) and b) are used in scintillation counters and spectrometers
c) multiplier type FEU-33 serves for the investigation of pro-
cesses which are separated by extremely narrow intervals (10^{-9} -
 10^{-10} seconds). d) The domain of application of the multiplier

Card 1/2

On Some Characteristics of New Industrial Types of the FEU 48-22-5-5/22
(Data From the VIIIth All-Union Conference on Cathode Electronics, Leningrad,
October 17-24, 1957)

with a cathode of bismuth-silver-cesium is determined by the particularities of its spectral characteristic (fig.1), e) A miniature multiplier with a semitransparent cathode of antimony-cesium was worked out for the application in a portable device. f) A further multiplier with a massive antimony-cesium cathode has a lateral optical entrance (Ref 1). The types e) and f) are vibrationproof.

Finally the stability of the FEU is discussed, which was investigated by the authors. In the discussion of this abstract participated G. S. Vildgrube, and N. S. Khlebnikov. There are 4 figures, 1 table and 1 reference, which is Soviet.

1. Electron multipliers - Properties 2. Electron multipliers
---Applications

Card 2/2

S07/48-22-8-19/20

AUTHORS: Berkovskiy, A. G., Breydo, I. Ya., Glukhovskiy, B. M.,
Korol'kova, O. S., Leyteyzen, L. G., Tarasova, Ye. I.

TITLE: Data Concerning Industrial Photoelectronic Multipliers for
Scintillation Spectrometers (Novyye iannyye o promyshlennyykh
tipakh fotoelektronnykh umnozhitseley dlya stsintillyatsionnykh
spektrometrov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958,
Vol.22, Nr 8, pp. 1005 - 1008 (USSR)

ABSTRACT: At the 7th All Union Conference on Nuclear Spectroscopy the
basic features of new FEU (photoelectronic multiplier - FEM)
types for spectrometry were communicated (Ref 1). In this paper
the authors give new data on earlier developed FEM types, which
are already in industrial production, and on new FEM's the
development of which was terminated in 1957. In that year the
mass production of the basic type of the spectrometers, the
FEM-29 was started. As a result of the investigations, the
types were arranged according to the voltages in the first
cascades of the multipliers which guarantee a good amplitude

Card 1/3

Data Concerning Industrial Photoelectronic Multipliers for Scintillation Spectrometers

SOV/48-22-8-19/20

resolution. As the problem arose whether it would be possible to produce spectrometers FEM with a better resolution, it was attempted to produce spectrometers FEM with multialkali cathodes (as, for example Sb-Na-K or Sb-Na-K-Cs cathodes) (In figure 3 the characteristics of these cathodes are given). The FEM-24 went into series production in the last year (Ref 1). The authors carried out experiments with good prospects with a multiplying system with toroidal dynodes of Al-Mg-alloys. One of the new types of midget spectrometers FEM is described as follows: cathode diameter 25 mm, maximum socket diameter 34,5 mm, length 110 mm. For practical operation the multiplier is equipped with a high-resistance potentiometer. From the table can be seen that the resolution of these multipliers is of the same order as that of FEM-29. The basic features of the design of the FEM-31 are given in reference 3. The spectrometric resolution of the FEM-31 which was measured with a crystal with a diameter of 14 mm was within the limits of 8,5 - 11%. An FEM with a large cathode (diameter 300 mm) was developed for work with liquid synthetic scintillators. (Antimony-caesium cathode

Card 2/3

SOV/48-22-8-19/20

Data Concerning Industrial Photoelectronic Multipliers for Scintillation Spectrometers

with a sensitivity better than $20 \mu A \text{ lm}^{-1}$, multiplier sensitivity at 2400 V better than $10 A \text{ lm}^{-1}$, toroidal dynodes of AMg K alloy). An FEM with a bismuth-silver-cesium cathode was described in reference 3. These multipliers give a good amplification. The amplitude resolution of 10 specimens of FEM with NaJ-(Tl)-crystal with a diameter of 20 mm and with Cs^{137} was within the limits of 12 - 14%. There are 5 figures, 1 table, and 3 references which are Soviet.

Card 3/3

20426

S/109/60/005/012/024/035

E192/E582

9.4/30 (3201, 2804, 1127, 2801)

AUTHORS: Leyteyzen, L.G., Glukhovskoy, B.M. and Tarasova, Ye. I.

TITLE: Simultaneous Activation of Various Photocathodes and
Emitters in Photo-electron Multipliers

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.12,
pp. 2038-2045

TEXT: A large number of photo-electron multipliers was analysed and the characteristics of their photocathodes were investigated. The photomultipliers were of the standard industrial or laboratory type. First the spectral characteristics of a number of multistage photo-electron multipliers with bismuth-silver-cesium cathodes and antimony-cesium emitters, as well as Al-Mg alloy emitters were investigated experimentally. Some of these are shown in Fig.1, where the wavelength is shown on the abscissa in microns. Some spectral characteristics of the multipliers with oxide-silver-cesium cathodes were also investigated and the results are given graphically. It is concluded that the shape of the characteristics of the tubes with antimony-cesium emitters is due to the strong adsorption of cesium by the emissive layer, so that a film of free cesium is formed on the cathode which lowers its work function.

Card 1/6

20426

S/109/60/005/012/024/035
E192/E582

Simultaneous Activation of Various Photocathodes and Emitters in Photo-electron Multipliers

The secondary emission coefficient of the photomultipliers was investigated at a fixed voltage and it was found that it varied considerably from sample to sample, depending on its processing conditions. The average efficiency characteristics of the secondary-emission surfaces were also investigated. The efficiency coefficient is defined as the average gain of the multiplier per stage; this was obtained by measuring a large number of samples and determining the voltage and sensitivity distribution for the cathodes (I.Ya.Breydo et al., Ref.1). In general, the distribution curves have the form of the normal Gaussian distribution. The average gain coefficients per stage for a number of standard multipliers produced in 1959 with various emitters were investigated by the above method and the results are given in a figure, while the details of the multipliers are shown in a table. The same figure shows also the gain of some of the American tubes (made by RCA). From the experimental data given in the figures it is seen that for the same interstage voltages the gain of the multipliers with antimony-caesium emitters is much higher than that of the tubes with

Card 2/6

20426
S/109/60/005/012/024/035
E192/E582

Simultaneous Activation of Various Photocathodes and Emitters in Photo-electron Multipliers

alloy-type emitters; the highest gain is obtained in the multipliers with a lateral optical input. The efficiency of various multiplier systems is approximately identical but the coefficient of the secondary emission as a function of voltage differs considerably. The effect of the presence of alkali metals on the secondary emission coefficient of alloy-type emitters was also investigated. According to N. Schaetti (Ref.3), M. Biermann and W. Krüger (Ref.4) and Ye. G. Kormakova and V. G. Pavlovskaya (Ref.5), the presence of cesium leads to an increase in the secondary emission coefficient σ . This effect was investigated for the Al-Mg emitters for the multipliers provided with a heated cathode. The overall gain of the multipliers was measured during various processing stages and the average gain was then calculated. The results of these measurements are given in Figs. 4 and 5. These show the gain per stage as a function of the interstage voltage; curves 1 and 2 in Fig.4 illustrate the effect of thermal activation, curves 1' and 2' represent the processing with K-Na, while curves 1'' and 2'' illustrate the influence of Cs processing. Curves 1,2 and 3 in Fig.5 show

Card 3/6

20426

S/109/60/005/012/024/035
E192/E582

X

Simultaneous Activation of Various Photocathodes and Emitters in Photo-electron Multipliers

the gain after the thermal activation, while curves 1', 2' and 3' illustrate the effect of Cs processing; in both figures the same emitters made of Al-Mg alloy were used. The dark current of the multipliers, which determines their sensitivity, was also investigated. It was found that the spread of this parameter, at a given sensitivity, in the standard commercial tubes was very considerable (several orders) and was much higher than the spread of other parameters. It was found that oxide-cesium cathodes give a constant thermal component of the dark current, which does not increase when the cathode is illuminated. On the other hand, an Sb-Cs cathode, operating with antimony-cesium emitters, has a very low thermal current. The multipliers with various other types of cathodes and with Al-Mg emitters give almost identical results as regards the thermal current. It is thought that the reason for the comparatively high dark currents in the multipliers with Sb-Cs cathodes and alloy-type emitters, as compared with other cathodes and emitters, is the luminescence of the alloy-type emitters.

Card 4/6

20426

S/109/60/005/012/024/035
E192/E582

Simultaneous Activation of Various Photocathodes and Emitters in Photo-electron Multipliers

There are 7 figures, 2 tables and 7 references: 3 Soviet and 4 non-Soviet.

SUBMITTED: December 21, 1959

Fig.1

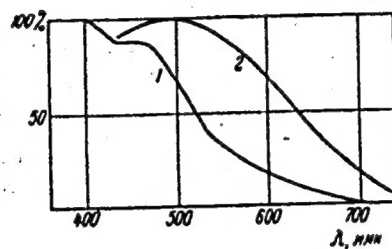


Рис. 1. Спектральные характеристики висмута-серебряно-цезиевых катодов:
1 — с Sb — Ca-эммитерами; 2 — с Al — Mg-эммитерами

Card 5/6